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AN, P.M.		
NI, B.J.		
MAN, L.K.		
LY, T.J.		
AHL, T.		
IG, J.G.		
CHINS, N.M.		
KSON, D.T.		
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STER, A.W.		
X, G.E.		
ONALD, M.M.		
ENNA, F.G.		
TROSE, J.K.		
GAN, R.V.		
TER, G.L.		
UTO, V.M.		
NG, T.L.		
DLIN, N.B.		
WARTZ, J.K.		
LOCK, G.H.		
WART, D.L.		
GER, S.G.		
IN, P.M.		
RHEIS, G.M.		
SON, J.M.		
A. LEDFORD	X	X
K. RUGER	X	X
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EG&G ROCKY FLATS

EG&G ROCKY FLATS, INC.
ROCKY FLATS PLANT, P.O. BOX 464, GOLDEN, COLORADO 80402-0464 • (303) 966-7000

August 17, 1994

94-RF-08630

G. I. Nishimoto
Acting Director/Liquid Residue Waste Division
DOE, RFFO

LETTER OF TRANSMITTAL: RECOMMENDED NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) DOCUMENTATION FOR THE OPERABLE UNIT 4 (OU 4) PHASE II RFI/RI PROGRAM - SRK-174-94

Action: Forward to the NEPA Compliance Officer

Attached is a copy of the Action Description Memorandum (ADM) for the OU 4 Phase II RFI/RI Program. The ADM has been reviewed by the Rocky Flats Plant NEPA Compliance Committee. A copy of the ADM has been made available to the DOE, RFO NEPA Compliance Officer.

Please forward the ADM to the NEPA Compliance Officer with a request to provide a final NEPA determination for this proposed action. Contact the Ecology and NEPA Division's Steve Nesta, at X6386, or Claire Reno at X4084, if further information is needed.

S. R. Keith
Program Manager
Solar Pond Projects

KLR:pjm

Orig. and 1 cc-G. I. Nishimoto

Attachment:
As Stated

cc:
S. Howard - DOE, RFFO
F. R. Lockhart - " "

ADMIN RECORD

A-OU04-001559

459 (Rev. 6/94)

EG&G ROCKY FLATS
NEPA COMPLIANCE COMMITTEE
ENVIRONMENTAL CHECKLIST REVIEW FORM

NEPA Record # 488

EC Date: 5/5/94

Project Name: Site Characterization for OU4: Solar Evaporation Ponds

Authorization or EJO#: _____ Project PA: K.J. Ogg

Initiating Line Manager: K.L. Ruger

NEPA compliance Committee Review (Sign & date applicable space):

	CX Recommended	Date	ADM Recommended
Environ. Doc.	Bill Moore	5/5/94	_____
Fac. Proj. Mgmt:	Peter Lewis	5/5/94	_____
General Counsel:	Daniel Miller	5/9/94	_____
Fac. Safety Eng.:		5/5/94	_____
Comments:			

CEQ Section 1506.1(c) Review:	Yes	No
1. Project justified independently	√	
2. Project will prejudice program decision		√

10 CFR 1022 Review (wetlands issue) needed: | | √

NCC Recommendation: ___√___ CX recommended.

_____ ADM recommended

END Mgr. Approval/Date: S M Pate 5/10/94

S M Pate 5/8/94 Rev. 1

ROCKY FLATS PLANT
ECOLOGY & NATIONAL ENVIRONMENTAL POLICY ACT DIVISION

ENVIRONMENTAL CHECKLIST

1. Project/Activity Name: Phase II RFI/RI Site Characterization for OU4: Solar Evaporation Ponds.
2. Date: June 7, 1994
3. DR/NC Number: 94-488
4. Charge Number: 989606-00
5. Work Package Number: 12165
6. ADS Number (E&WM only): 1258
7. EG&G Project Administrator: K. L. Ruger
8. DOE Program Sponsor: Frazer Lockhart
9. Initiating Line Manager: R.T. Ogg
10. Total Estimated Cost: $1,000,000
11. Project/Activity Description Summary:

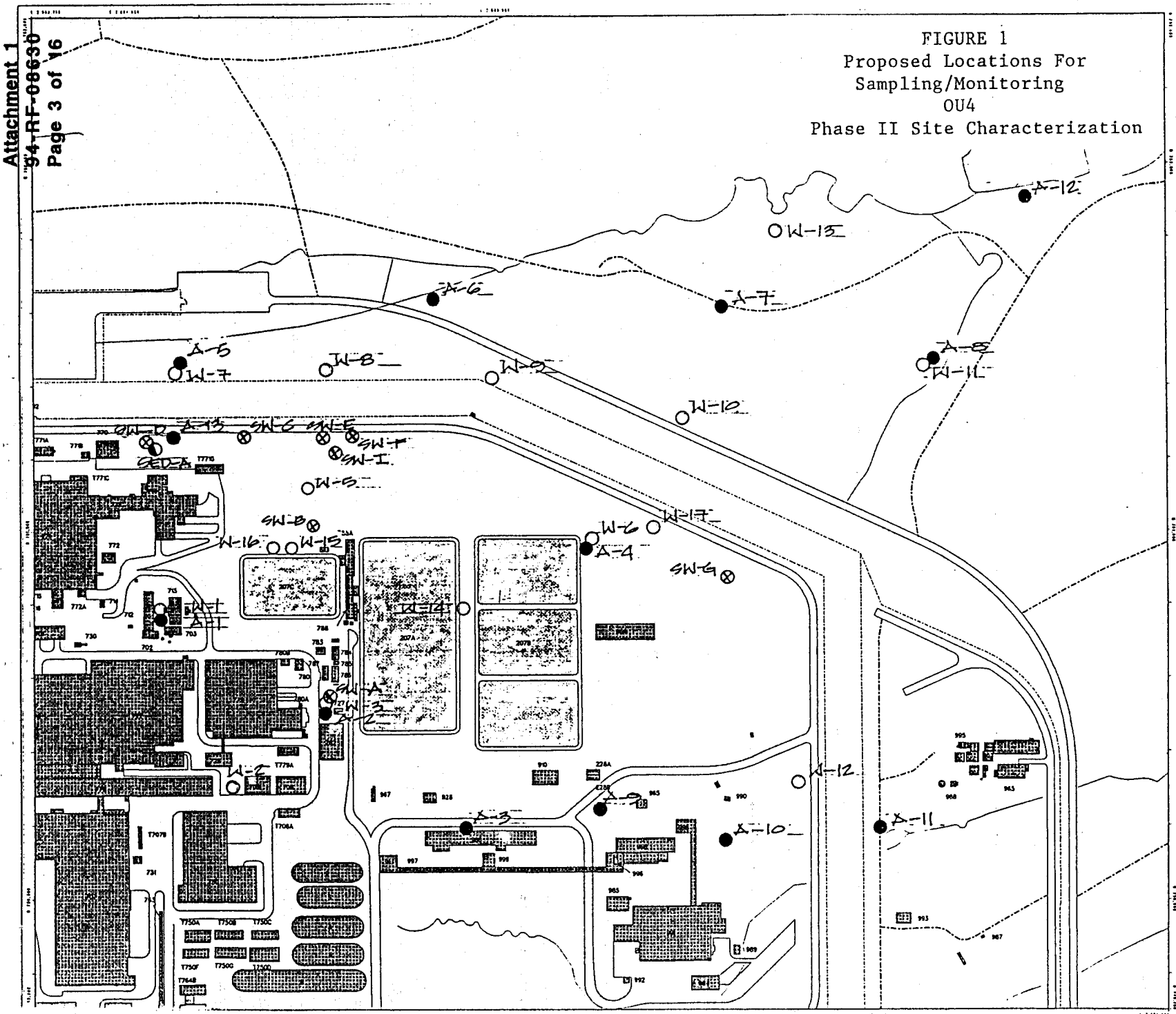
Rocky Flats proposes to conduct field activities as part of the site characterization work in Operable Unit 4, the Solar Evaporation Ponds, located in the northeast portion of the Industrial Area at Rocky Flats Plant (Figure 1). Thirty (30) new monitoring wells would be drilled for the Phase II RFI/RI (i.e., the multi-phased Resource Conservation and Recovery Act (RCRA) Facility Investigation/Remedial Investigation for Operable Unit 4), which is required by the Interagency Agreement to include draft baseline risk assessments and evaluations of the effectiveness of the Interim Measures/ Interim Remedial Action (IM/IRA) implemented at OU4.

Based on the findings of the previous site characterization activities, the following activities are proposed for Phase II site characterization:

- Groundwater sampling and monitoring.
- Surface water sampling and flow monitoring.
- Sediment sampling.
- Surface and borehole geophysical surveys.

Reviewed for Classification ____
By:_____
Date:_____

FIGURE 1
Proposed Locations For Sampling/Monitoring OU4 Phase II Site Characterization



Standard Map Features

- Buildings or other structures
- Lakes and ponds
- Streams, ditches, or other drainage features
- Fences
- Paved roads
- Dirt roads

Alluvial Well
Bedrock Well
Surface Water Station
Sediment Sample

MAP REDUCED FOR REPORT

U.S. Department of Energy
Rocky Flats Plant

Prepared by:
EG&G ROCKY FLATS
Rocky Flats Plant
P.O. Box 464
Golden, Colorado 80402-0464

None Assigned		
*** Draft ***		
May 03, 1994		

Portions of this work would be staged as an iterative process, wherein knowledge gained in the field is immediately used to guide subsequent field work. A specific example is surficial geophysics, which would be used to locate bedrock channels and, thereby more effectively place wells. The existing monitor wells and surface water stations have been incorporated as much as possible into the development of the Field Sampling Plan for Phase II RFI/RI site characterization activities.

The proposed activities will not take place in wetlands or other environmentally-sensitive areas. Vehicles would use established roads or tracks, to the maximum extent possible, to gain access to each well site. Environmental impact would be limited to primarily downed vegetation and tire impressions in the immediate vicinity of the well site.

Site characterization activities would be discontinued at the end of the OU4 Phase II RFI/RI Field Sampling Program unless stations and/or wells are incorporated into other continuing monitoring plans. The program is estimated to be complete within 12 months of its inception.

Nonintrusive Activities. Much of the proposed site characterization consists of nonintrusive activity. These activities include the surface water sampling and flow monitoring, sediment sampling, and surface and borehole geophysical surveys. Typically, the establishment of these sampling and monitoring stations does not involve soil disturbance and heavy equipment or vehicles are not necessary to carry out the sampling program. Platforms are placed on the ground at the station location. Monitoring and sampling equipment is mounted on the platform. Although, it may be necessary to install flumes at some of the automatic stations in order to collect more accurate flow data, these flumes would only be 6-12 inch Throat Parshall flumes about 2 feet long and flush-mounted on the ground surface. Installation of monitoring equipment consists of lowering of a small pressure transducer into the manhole/wet well. Water flow data and manhole inundation would be recorded by multi-channel data loggers set at the surface near the manhole.

Two (2) surface water monitoring stations would be established at seeps on the hillside north of the Solar Ponds to determine water quality. Seven (7) automatic storm/surface water monitoring flow and sampling stations would be established to determine the quality and quantity of surface water flowing onto and out of OU4. Water flow monitoring and sampling would be performed at two (2) locations in the Interceptor Trench System (ITS). One (1) sediment sampling location would be established in Bowman's Pond. Bowman's Pond is also known as the 774 Pond and consists of a shallow area previously used to collect condensate from Building 774 (currently, it collects only surface and storm runoff). Sediment samples would be gathered from the pond bottom to determine if contaminants are present in the pond sediments. Sediment sampling station "SED-A" would be sampled quarterly by RFP personnel wading into the pond to secure the samples manually. Minimal resuspension of pond sediments would occur. Surface and borehole geophysical surveys would be conducted using seismic refraction and ground penetrating radar, both of which are nonintrusive and are implemented by RFP personnel using a small utility truck.

Borehole Drilling Procedures and Sampling Methodology. Thirteen (13) boreholes would penetrate surficial materials to the surface of weathered bedrock and would be completed as 2-inch-diameter alluvial groundwater monitoring wells. Seventeen (17) boreholes would penetrate surficial materials and weathered bedrock to the surface of unweathered bedrock and would be completed as 2-inch-diameter bedrock groundwater monitoring wells. Drilling equipment consists of the drill rig, equipment truck, and portable geological laboratory. Disturbance to vegetation and soil would be minimal, approximately 200 square feet at each well site. Heavy equipment would use existing dirt roads except while at each proposed well site.

Borehole drilling would be performed, where possible, with a sonic drill rig; and where necessary, with a truck-mounted hollow stem auger rig. Sonic drilling has an advantage over conventional auger and

percussion drilling because it allows continuous sample retrieval through cobbles and boulders. It uses a relatively high frequency oscillating drill head combined with downward pressure and low rotation to advance the drill string through unconsolidated and consolidated materials. It also has a rapid rate of penetration and produces little drill waste at the drill site, thereby eliminating waste and the need for waste disposal. Sampling runs using the sonic drill rig would be adapted to sample recovery conditions encountered in the field. Drilling with the hollow stem auger rig into Rocky Flats Alluvium would be done in 1-foot runs to maximize core recovery in cobbly material. Two-foot runs would be used in bedrock.

All drilling and sampling would be performed according to RFP Operating Procedures *GT.02: Drilling and Sampling Using Hollow Stem Auger Techniques.* Continuous core would be collected for lithologic description and logged according to *GT.01: Logging Alluvial and Bedrock Material.* When feasible, the continuous coring method would be used to collect samples; drive sampling would be used when warranted by field conditions.

Samples collected for geotechnical analysis would be collected in 9-inch stainless steel sleeves, or as specified by the receiving laboratory. Soil samples would be collected from ground surface to total depth. To collect composite samples, the sample material would be placed in a safe location, out of direct sunlight, until the appropriate number of core samples have been collected.

Drilling and sampling equipment decontamination would be performed according to *FO.03: General Equipment Decontamination, FO.04: Heavy Equipment Decontamination,* and *FO.08: Handling of Drilling Fluids and Cuttings.* Subsequent to sample collection, the exterior of the sample containers would be decontaminated and the containers placed in coolers lined with a plastic bag designated for sample transportation. Blue ice or its equivalent would be placed in each cooler. Official custody of samples would be maintained and documented from the time of collection until the time that valid analytical results have been obtained or the lab has been authorized to dispose of the sample.

All drilling equipment would be decontaminated prior to being taken to the work site. The drilling tools would be decontaminated between each monitoring well installation. The drill rig would be decontaminated after site characterization work is complete. Sampling equipment would be decontaminated between samples. Equipment would be inspected for evidence of fuel oil or hydraulic system leaks. If lubricants are required for downhole equipment, only pure vegetable oil would be used. All sampling equipment would be separated from the ground surface with clear plastic sheeting.

New Alluvial/Bedrock Wells. The 30 boreholes would be completed as new alluvial or bedrock monitoring wells to augment the water samples and water level measurements taken from existing wells to analyze groundwater conditions. Through a series of aquifer tests (slug tests and pump tests), the wells would be used to characterize upgradient groundwater quality; fill existing gaps in the alluvial monitoring network; delineate the extent of contamination; determine the connection between plumes in North and South Walnut Creeks and the Solar Evaporation Ponds; and evaluate the effectiveness of the ITS. In general, bedrock wells are to be installed near existing or planned alluvial wells (and visa versa) so that the interaction between the alluvial and bedrock aquifers can be described from site characterization.

The exact locations of each well may vary slightly from mapped locations (Figure 1) depending upon limitations caused by the cultural and topographical features (e.g., buildings, pipelines, overhead powerlines) in the Industrial Area of the plant. This variance is estimated to range from 100 to 200 feet. Exact locations for wells to be located outside of the Protected Area may be determined by the results of the surface geophysics program. For example, if channels within the bedrock surface are found, well locations would be adjusted such that one or more alluvial wells are sited in bedrock paleochannels.

In addition to serving as investigatory wells for the Phase II RFI/RI, some of the wells would be retained as post-closure monitoring wells (A-1, A-2, A-4, W-3, and W-4). The rest of the wells would be abandoned and capped at the completion of the OU4 Phase II RFI/RI Field Sampling Program.

Monitoring Well Installation, Development, and Sampling Procedures. Two-inch-diameter groundwater monitoring wells would be constructed in all soil borings as specified in *GT.06: Monitoring Wells and Piezometer Installation.* Well casings would consist of new, threaded flush-joint Schedule 40 PVC. The well casing would extend from the top of the well screen to approximately 2 feet above ground surface. Well screens would consist of new, threaded PVC pipe with 0.010-inch factory-machined slots or wrapped screen.

Special care would be taken to avoid cross contamination between upper and lower aquifers, primarily by following *GT.03: Isolating Bedrock from Alluvial with Grouted Surface Casing.* In addition, it would be necessary to isolate bedrock sandstone from bedrock claystone, particularly where bedrock sandstone contamination is suspected. Monitoring wells placed in high traffic areas would be protected by steel posts placed around wells, as defined in *GT.06: Monitoring Wells and Piezometer Installation.*

Monitoring wells would be developed for groundwater sampling. Well development and groundwater sampling would be conducted according to the following procedures: *GW.02: Well Development*; *GW.06: Field Measurement of Groundwater Field Parameters*; *FO.05: Handling of Purge and Development Water*; and *FO.07: Handling of Decontamination Water and Wash Water.*

Monitoring well development is the process by which the well drilling fluids and mobile particulates are removed from within and adjacent to newly installed wells. Well development would be conducted as soon as possible after well installation, but no sooner than 48 hours after grouting and pad installation are completed. An inertial pump or bottom discharge/filling bailer would be used in development activities.

Well Abandonment. As noted previously, some of the proposed wells would be retained as post-closure monitoring wells (A-1, A-2, A-4, W-3, and W-4). The rest of the wells would be abandoned and capped according to *GT.11: Plugging and Abandonment of Wells* at the completion of the OU4 Phase II RFI/RI Field Sampling Program.

In abandoning wells, a truck-mounted drill rig would be driven to each well site where access is favorable. The original 2-foot concrete pad would be removed manually. The rig would, then, be used to remove surface and well casings. The hole would be reamed to a diameter larger than the original hole to remove the annular materials, in order to promote a good seal between the hole wall and the new grout.

At some locations within the Industrial Area , space to operate a drill rig is limited. Therefore, wells in this situation would typically be abandoned in place; that is, the casing would not be removed from the well. When the casing is left in place, a water-tight cover is permanently fixed to the top of the casing. Whether the casing is removed or left in place, all wells would be filled with bentonite grout to ensure that potentially-contaminated water cannot move between water-bearing strata via the well. A 2-foot square concrete surface seal and metal marker would mark the location of the abandoned well.

* * *

		YES	NO	Addl. Notes
12.	**Statutes applicable:**			
12.1	Will the project require/potentially require a permit(s) application or permit modification(s) under:			
	A. Clean Air Act?		√	
	B. Colo. Air Quality Control Commission Regulation 3?		√	
	C. Clean Water Act?		√	
12.2	Does the project involve RCRA? [If "NO," skip to C.]		√	see Note 1
	A. Will a RCRA permit or modification be required?			
	B. Does the project include a removal?			
	C. Does the project include a RCRA closure?			
	A full closure?			
	A partial closure?			
	D. Does the project include excavation or capping to meet RCRA requirements?			
	E. Will the cost and duration stay within $2 million and 12 months? [Explain in "VI. Project/Activity Description"]			
12.3	Does the project involve CERCLA? [If "NO," skip to D.]		√	see Note 1
	A. Does the project include CERCLA removal activity?			
	B. Will the cost and duration stay within $2 million and 12 months? [Explain in "VI. Project/Activity Description"]			
12.4	Does the project threaten to violate DOE Orders or statutory, regulatory, or permit requirements?		√	
12.5	Will the action be in or near an Individual Hazardous Substance Site (IHSS)?	√		see Note 2
12.6	Does the project potentially impact threatened or endangered species or habitat, or be subject to the following regulations:			
	A. the Migratory Bird Treaty Act?		√	
	B. the Bald and Golden Eagle Protection Act?		√	
	C. the Fish and Wildlife Coordination Act?		√	
	D. Colorado Non-game Program?		√	
	E. Endangered Species Conservation Act?		√	
13.	Will this project construct or require a new or expanded waste disposal, recovery, storage, or treatment facility?		√	
14.	Is the project needed for IAG, AIP, FFCA, or other federal or state agreements? [Specify and explain schedule urgency/deadlines in "VI. Project/Activity Description"]	√		see Note 3
15.	Is the project:			
15.1	A new process, building, etc.?		√	
15.2	A modification to an existing process, building, etc.?		√	
15.3	An installation of capital equipment or machinery?		√	

		YES	NO	Addl. Notes:
16.	Location items:			
16.1	Will the project result in, or have the potential to result in, long term changes to the environment?		√	
16.2	Will the action take place in a wetland or floodplain?		√	
17.	Will the project result in changes and/or disturbances to the existing conditions of the following:			
17.1	Noise levels?		√	
17.2	Air emissions?		√	
17.3	Liquid effluents?		√	
17.4	Solid wastes?		√	
17.5	Radioactive wastes (including disturbed/excavated contaminated soil)?	√		see Note 4
17.6	Hazardous waste?	√		see Note 4
17.7	Mixed waste (radioactive and/or hazardous)	√		see Note 4
17.8	Chemical or petroleum product storage?		√	
17.9	Water use (the withdrawal of groundwater or the withdrawal/diversion of surface water)?	√		see Note 5
17.10	Drinking water system?		√	
17.11	Soil movement outside of facility fences or beyond IHSS boundaries?	√		see Note 6
17.12	Site clearing, excavation, or other physical alterations to grade?		√	
18.	Will the project threaten public health and safety?		√	
19.	Will the project have possible effects on the environment which are likely to be highly controversial?		√	
20.	Will the project establish a precedent for future actions that will have significant effects, or represent a "decision in principle" about a future consideration?		√	
21.	Will the project be substantially related to other actions that have individually-insignificant, but cumulatively-significant, impacts?		√	
22.	Will the project adversely affect designated federal, state, or local:			
22.1	Natural areas?		√	
22.2	Prime agricultural land?		√	
22.3	Special water sources?		√	
22.4	Historical, archaeological, or architectural sites?		√	
23.	Have pollution prevention measures been considered?	√		see Note 7

Checklist Notes:

1. The Site Characterization programs are undertaken pursuant to the provisions of RCRA and CERCLA, as part of DOE's remediation of the RFP site; but, do not otherwise involve this act.

2. Because the program is aimed at characterizing contaminated sites, most of the activity would take place in various IHSSs within OU4.

3. The site characterization work at OU4 is being undertaken according to schedules described in the IAG.

4. Certain borehole drilling, well drilling, and water/soil sampling could produce media contaminated with hazardous and/or radioactive substances. All such media would be handled and disposed of in accordance with applicable procedures and regulations. Individual sample sizes and cumulative quantities of contaminated media would be relatively small.

5. Water would be withdrawn from wells in small (e.g. quart, gallon) quantities over a period of time. Water samples would be analyzed for their constituents and disposed of in accordance with applicable procedures and regulations.

6. Soil and core samples would be removed to onsite or offsite laboratories for analysis of their constituents. Individual soil sample sizes would be small (e.g., pounds). Core sizes would generally be 1 1/2 inches in diameter and as long as the borehole is deep. Soil and core samples would be disposed of in accordance with applicable procedures and regulations.

7. Sonic drilling is the preferred technology to be used in characterizing OU4. This technology produces less drill waste at the drill site. Also, wells would be grouted to prevent the movement of potentially-contaminated water from one water-bearing strata to another.

* * * * *

EC Prepared By: nlm
Organization: END

Extension: x3568
Date: June 7, 1994

SUBPART D
CATEGORICAL EXCLUSION (CX) DETERMINATION - RFO/CX 00-94

Proposed Action: Phase II RFI/RI Site Characterization of OU4

Location: Solar Evaporation Ponds, Rocky Flats Plant

Proposed by: U.S. Department of Energy, Rocky Flats Plant, Golden, Colorado.

Description of the Proposed Action:

Rocky Flats proposes to conduct field activities as part of the site characterization work in Operable Unit 4, the Solar Evaporation Ponds, located in the northeast portion of the Industrial Area at Rocky Flats Plant (Figure 1). Thirty (30) new monitoring wells would be drilled for the Phase II RFI/RI (i.e., the multi-phased *Resource Conservation and Recovery Act (RCRA) Facility Investigation/Remedial Investigation* for Operable Unit 4), which is required by the Interagency Agreement to include draft baseline risk assessments and evaluations of the effectiveness of the Interim Measures/ Interim Remedial Action (IM/IRA) implemented at OU4.

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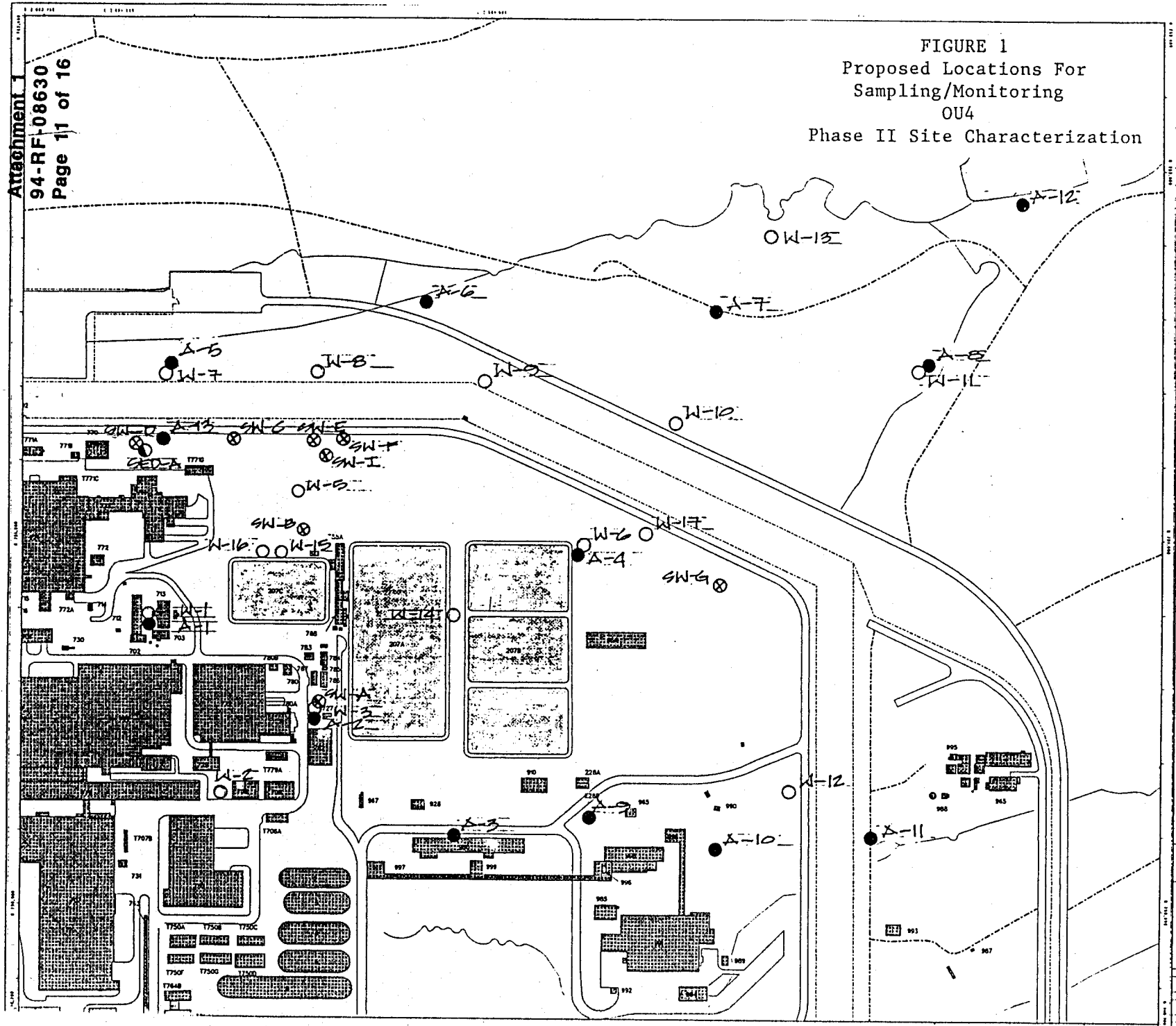
FIGURE 1
Proposed Locations For Sampling/Monitoring OU4 Phase II Site Characterization



OU4 Phase II Work Plan

Standard Map Features
- Buildings or other structures
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- Fences
- Paved roads
- Dirt roads

- Alluvial Well
- Bedrock Well
- Surface Water Station
- Sediment Sample

MAP REDUCED 12% FOR REPORT

U.S. Department of Energy
Rocky Flats Plant

Prepared by:
EG&G ROCKY FLATS
Rocky Flats Plant
P.O. Box 464
Golden, Colorado 80402-0464

None Assigned		
*** Draft ***		
May 03, 1994		

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Drilling and sampling equipment decontamination would be performed according to *FO.03: General Equipment Decontamination*, *FO.04: Heavy Equipment Decontamination*, and *FO.08: Handling of Drilling Fluids and Cuttings.* Subsequent to sample collection, the exterior of the sample containers would be decontaminated and the containers placed in coolers lined with a plastic bag designated for sample transportation. Blue ice or its equivalent would be placed in each cooler. Official custody of samples would be maintained and documented from the time of collection until the time that valid analytical results have been obtained or the lab has been authorized to dispose of the sample.

All drilling equipment would be decontaminated prior to being taken to the work site. The drilling tools would be decontaminated between each monitoring well installation. The drill rig would be decontaminated after site characterization work is complete. Sampling equipment would be decontaminated between samples. Equipment would be inspected for evidence of fuel oil or hydraulic system leaks. If lubricants are required for downhole equipment, only pure vegetable oil would be used. All sampling equipment would be separated from the ground surface with clear plastic sheeting.

New Alluvial/Bedrock Wells. The 30 boreholes would be completed as new alluvial or bedrock monitoring wells to augment the water samples and water level measurements taken from existing wells to analyze groundwater conditions. Through a series of aquifer tests (slug tests and pump tests), the wells would be used to characterize upgradient groundwater quality; fill existing gaps in the alluvial monitoring network; delineate the extent of contamination; determine the connection between plumes in North and South Walnut Creeks and the Solar Evaporation Ponds; and evaluate the effectiveness of the ITS. In general, bedrock wells are to be installed near existing or planned alluvial wells (and visa versa) so that the interaction between the alluvial and bedrock aquifers can be described from site characterization.

The exact locations of each well may vary slightly from mapped locations (Figure 1) depending upon limitations caused by the cultural and topographical features (e.g., buildings, pipelines, overhead powerlines) in the Industrial Area of the plant. This variance is estimated to range from 100 to 200 feet. Exact locations for wells to be located outside of the Protected Area may be determined by the results of the surface geophysics program. For example, if channels

within the bedrock surface are found, well locations would be adjusted such that one or more alluvial wells are sited in bedrock paleochannels.

In addition to serving as investigatory wells for the Phase II RFI/RI, some of the wells would be retained as post-closure monitoring wells (A-1, A-2, A-4, W-3, and W-4). The rest of the wells would be abandoned and capped at the completion of the OU4 Phase II RFI/RI Field Sampling Program.

Monitoring Well Installation, Development, and Sampling Procedures. Two-inch-diameter groundwater monitoring wells would be constructed in all soil borings as specified in *GT.06: Monitoring Wells and Piezometer Installation.* Well casings would consist of new, threaded flush-joint Schedule 40 PVC. The well casing would extend from the top of the well screen to approximately 2 feet above ground surface. Well screens would consist of new, threaded PVC pipe with 0.010-inch factory-machined slots or wrapped screen.

Special care would be taken to avoid cross contamination between upper and lower aquifers, primarily by following *GT.03: Isolating Bedrock from Alluvial with Grouted Surface Casing.* In addition, it would be necessary to isolate bedrock sandstone from bedrock claystone, particularly where bedrock sandstone contamination is suspected. Monitoring wells placed in high traffic areas would be protected by steel posts placed around wells, as defined in *GT.06: Monitoring Wells and Piezometer Installation.*

Monitoring wells would be developed for groundwater sampling. Well development and groundwater sampling would be conducted according to the following procedures: *GW.02: Well Development*; *GW.06: Field Measurement of Groundwater Field Parameters*; *FO.05: Handling of Purge and Development Water*; and *FO.07: Handling of Decontamination Water and Wash Water.*

Monitoring well development is the process by which the well drilling fluids and mobile particulates are removed from within and adjacent to newly installed wells. Well development would be conducted as soon as possible after well installation, but no sooner than 48 hours after grouting and pad installation are completed. An inertial pump or bottom discharge/filling bailer would be used in development activities.

Well Abandonment. As noted previously, some of the proposed wells would be retained as post-closure monitoring wells (A-1, A-2, A-4, W-3, and W-4). The rest of the wells would be abandoned and capped according to *GT.11: Plugging and Abandonment of Wells* at the completion of the OU4 Phase II RFI/RI Field Sampling Program.

In abandoning wells, a truck-mounted drill rig would be driven to each well site where access is favorable. The original 2-foot concrete pad would be removed manually. The rig would, then, be used to remove surface and well casings. The hole would be reamed to a diameter larger than the original hole to remove the annular materials, in order to promote a good seal between the hole wall and the new grout.

At some locations within the Industrial Area, space to operate a drill rig is limited. Therefore, wells in this situation would typically be abandoned in place; that is, the casing would not be

removed from the well. When the casing is left in place, a water-tight cover is permanently fixed to the top of the casing.

Whether the casing is removed or left in place, all wells would be filled with bentonite grout to ensure that potentially contaminated water cannot move between water-bearing strata via the well. A 2-foot square concrete surface seal and metal marker would mark the location of the abandoned well.

Initiation of drilling activities is expected to begin in the fall of Calendar Year 1994; the estimated cost of the Phase II site characterization is $1,000,000.

* * *

Categorical Exclusion to be Applied:

B3.1 Site characterization and environmental monitoring, including siting, construction, operation, and dismantlement or closing (abandonment) of characterization and monitoring devices and siting, construction, and operation of a small-scale laboratory building or renovation of a room in an existing building for sample analysis. Activities covered include, but are not limited to, site characterization and environmental monitoring under CERCLA and RCRA. Specific activities include, but are not limited to:

(a) Geological, geophysical (such as gravity, magnetic, electrical, seismic, and radar), geochemical, and engineering surveys and mapping, including the establishment of survey marks; (b) Installation and operation of field instruments, such as stream-gauging stations or flow-measuring devices, telemetry systems, geochemical monitoring tools, and geophysical exploration tools; (c) Drilling of wells for sampling or monitoring of groundwater or the vadose (unsaturated) zone, well logging, and installation of water-level recording devices in wells; (d) Aquifer response testing; (e) Installation and operation of ambient air monitoring equipment; (f) Sampling and characterization of water, soil, rock, or contaminants; (g) Sampling and characterization of water effluents, air emissions, or solid waste streams; (h) Installation and operation of meteorological towers and associated activities, including assessment of potential wind energy resources; (i) Sampling of flora or fauna; and (j) Archeological, historic, and cultural resource identification in compliance with 35 CFR part 800 and 43 CFR part 7.

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DOE NEPA REGULATIONS SUBPART D
CATEGORICAL EXCLUSION DETERMINATION — RFO/CX00-94

Phase II RFI/RI Site Characterization for OU4: Solar Evaporation Ponds.

I have determined that the proposed action meets the requirements for a categorical exclusion as defined in Subpart D of 10 CFR 1021. Therefore, I approve the categorical exclusion of the proposed action from further NEPA review and documentation.

Date: _____ **Signature:** _____

M. N. Silverman

Title: Manager, Rocky Flats Office

DOE RFFO Project Sponsor:

I have reviewed this project description and have determined that it is accurate and appropriate.

Date: _____ **Signature:** _____

F. Lockhart

Title: Environmental Restoration Division

I have reviewed this determination and find that a categorical exclusion is the appropriate level of NEPA Documentation.

Date: _____ **Signature:** _____

Patricia M. Powell

Title: NEPA Compliance Officer